



Preliminary Amendment

Responsive to Final Office Action dated 01/03/2003

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1 (original). A hinge for an orthopedic splint comprising:

an upper plate and a lower plate connected for pivotal movement, a detent supported on said upper plate and displaceable into and out of an engaged condition thereby to lock the two plates against said pivotal movement in a
10 selected angular relationship relative to each other, a spring normally urging said detent into said engagement, cover means protecting said detent against displacement out of said engagement by an unaided hand, and an aperture in said cover means sized and disposed for admitting a tool end operative for displacing said detent out of said engagement against said urging of said spring
15 and thus to free the plates for said pivotal movement, whereby tampering with the angular setting of said hinge by a patient wearing said orthopedic splint is discouraged.

2 (original). The hinge of Claim 1 wherein said detent is displaceable in a guide
20 way defined between said upper plate and said cover means.

3 (original). The hinge of Claim 2 wherein said spring is contained in said guide way.

25 4 (original). The hinge of Claim 3 wherein said spring is a coil spring compressed between said upper plate and said detent.

5 (original). The hinge of Claim 1 wherein said detent is engageable with a toothed edge on said lower plate.

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6 (original). The hinge of Claim 1 wherein said aperture is a slot aligned with a direction of displacement of said detent, said slot being sized and dimensioned to allow visual confirmation of engagement of said detent with said toothed edge.

5 7 (original). The hinge of Claim 1 wherein said detent has a tool end receptacle adapted to receive the said tool end thereby to facilitate displacement of said detent by means of a said tool end.

10 8 (original). The hinge of Claim 1 wherein said pivotal movement comprises an arc including a zero angle position at an intermediate location along said arc, such that said plates may be moved through substantial angular ranges on either side of said zero angle position.

15 9 (original). The hinge of Claim 8 wherein said zero angle position is centered along said arc such that said plates may be pivoted through equal angular ranges on either side of said zero angle position.

10 (original). The hinge of Claim 9 wherein said plates are aligned in a straight line in said zero angle position.

20 11 (original). The hinge of Claim 1 further comprising a locking element removably engageable with said detent for holding said detent out of said engagement thereby to facilitate adjustment of the plates to a desired angular relationship.

25 12 (original). The hinge of Claim 11 wherein said locking element is threaded for engagement with said detent.

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13 (original). The hinge of Claim 12 wherein said locking element is a screw engageable in a threaded screw hole defined in said detent, such that an end of said screw bears against said upper plate or engages with a hole in the upper plate thereby to hold said detent against said urging of said spring.

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14 (original). The hinge of Claim 1 further comprising range setting means engageable by said detent, said range setting means being adjustable for limiting said pivotal movement to a greater or lesser arc in a disengaged condition of said detent.

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15 (original). The hinge of Claim 14 wherein said range setting means comprises a pair of wheels turning concentrically with said pivotal movement of the plates, each of said wheels having a wheel edge engageable by said detent for locking the wheel relative to said upper plate, and a stop on each of said wheels operative for limiting pivotal movement of said lower plate relative to said upper plate in one direction of movement, a stop pin on said lower plate being disposed between the two stops such that the range of pivotal movement between the plates may be set by the angular spacing between the two stops when said detent is engaged for locking said wheels against rotation relative to said upper plate.

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16 (original). The hinge of Claim 1 further comprising tabs projecting radially from said wheel edge of said wheels and directional markings on said tabs as a visual indicator for assisting a therapist in determining the relative positions of the tabs during adjustment of the hinge.

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17 (original). The hinge of Claim 1 wherein said cover means includes a spacer mounted to said upper plate and defining a guide way for said detent and a cover plate for containing said detent in said guide way.

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18 (currently amended). A hinge for an orthopedic splint comprising:
an upper plate and a lower plate connected for pivotal movement, a detent
element supported on said upper plate and displaceable into and out of an
engaged condition thereby to lock the two plates against said pivotal movement
in a selected angular relationship relative to each other, a spring normally urging
said detent into said engagement, wherein said pivotal movement comprises an
arc including a zero angle position at an intermediate location along said arc,
such that said plates may be moved through substantial angular ranges on either
side of said zero angle position, and covering structure adjacent to said detent for
substantially preventing access to said detent by an unaided hand and defining
an aperture for admitting a tool into engagement with said detent for displacing
said detent out of said engagement thereby to free the plates for said pivotal
movement, such that tampering with the angular setting of said hinge by a patient
wearing said orthopedic splint is discouraged ~~tamper deterrent means arranged~~
~~for protecting said detent element against displacement out of said engagement~~
~~by an unaided hand.~~

19 (original). The hinge of Claim 18 wherein said zero angle position is centered
along said arc such that said plates may be pivoted through equal angular
ranges on either side of said zero angle position.

20 (original). The hinge of Claim 19 wherein said plates are aligned in a straight
line in said zero angle position.

21 (currently amended). The hinge of Claim 18 wherein said covering structure
comprises an apertured plate generally encompassing said detent such that the
detent is substantially recessed below an outer surface of said plate within said
aperture, said aperture being sized to prevent operation of said detent by an
unaided hand ~~tamper deterrent means comprise cover means protecting said~~
~~detent element against displacement out of said engagement by an unaided~~

2 hand, and an aperture in said cover means sized and disposed for admitting a
tool end operative for displacing said detent out of said engagement against said
urging of said spring and thus to free the plates for said pivotal movement,
whereby tampering with the angular setting of said hinge by a patient wearing
5 said orthopedic splint is discouraged.

22 (original). A hinge for an orthopedic splint comprising:

an upper plate and a lower plate connected for pivotal movement, a detent
supported on said upper plate and displaceable into and out of an engaged
10 condition thereby to lock the two plates against said pivotal movement in a
selected angular relationship relative to each other, a spring normally urging said
detent into said engagement, and a locking element removably engageable with
said detent for holding said detent out of said engagement thereby to facilitate
adjustment of the plates to a desired angular relationship.

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23 (original). The hinge of Claim 22 wherein said locking element is threaded for
engagement with said detent.

24 (original). The hinge of Claim 23 wherein said locking element is a screw
20 engageable in a threaded screw hole defined in said detent, such that said screw
engages said upper plate thereby to hold said detent in a disengaged condition
against said urging of said spring.

25 (original). The hinge of Claim 24 wherein said screw is removable from the
25 splint thereby to discourage tampering with the detent or may be left in place and
tightened to secure said detent in said engaged condition.

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C3 26 (currently amended). A hinge for an orthopedic splint comprising:
an upper plate and a lower plate connected for pivotal movement, a detent
element supported on said upper plate and displaceable into and out of an
engaged condition thereby to lock the two plates against said pivotal movement
5 in a selected angular relationship relative to each other, a spring normally urging
said detent into said engagement, a pair of wheels turning concentrically with
said pivotal movement of the plates, each of said wheels having a wheel edge
engageable by said detent for locking the wheel relative to said upper plate, and
a stop on each of said wheels operative for limiting pivotal movement of said
10 lower plate relative to said upper plate in one direction of movement, a pin on
said lower plate disposed for movement between the two stops such that the
range of pivotal movement between the plates may be set by the angular spacing
between the two stops when said detent is engaged for locking said wheels
against rotation relative to said upper plate, and covering structure adjacent to
15 said detent for substantially preventing access to said detent by an unaided hand
and defining an aperture for admitting a tool into engagement with said detent for
displacing said detent out of said engagement thereby to free the plates for said
pivotal movement, such that tampering with the angular setting of said hinge by a
patient wearing said orthopedic splint is discouraged ~~tamper deterrent means~~
20 ~~arranged for protecting said detent element against displacement out of said~~
~~engagement by an unaided hand.~~

27 (currently amended). The hinge of Claim 26 further comprising a tab
extending radially from each of said wheels and directional markings on each
25 said tab wheels as a visual indicator for assisting a therapist in setting the relative
angular positions of the wheels during adjustment of the hinge.

28 (currently amended). The hinge of Claim 27 wherein said directional
markings are a directional arrow on each of said tabs ~~extending radially from said~~
30 ~~wheels.~~

same problem
as C18

29 (currently amended). A hinge for an orthopedic splint comprising:

an upper plate and a lower plate connected for pivotal movement, a detent element supported on said upper plate and displaceable into and out of an engaged condition thereby to lock the two plates against said pivotal movement in a selected angular relationship relative to each other, a spring normally urging said detent into said engagement, a pair of wheels turning concentrically with said pivotal movement of the plates, each of said wheels having a wheel edge engageable by said detent for locking the wheel relative to said upper plate, and a stop on each of said wheels operative for limiting pivotal movement of said lower plate relative to said upper plate in one direction of movement, ^{AB} said pin on lower plate being disposed between the two stops such that the range of pivotal movement between the plates may be set by the angular spacing between the two stops when said detent is engaged for locking said wheels against rotation relative to said upper plate, a tab extending radially from each of said wheels and directional markings on each said tab ~~wheels provided as~~ a visual indicator for assisting a therapist in setting the relative angular positions of the wheels during adjustment of the hinge.

30 (currently amended). The hinge of Claim 29 wherein said directional markings are a directional arrow on each of said tabs ~~extending radially from said wheels.~~

31 (currently amended). The hinge of Claim 29 further comprising covering structure adjacent to said detent for substantially preventing access to said detent by an unaided hand and defining an aperture for admitting a tool into engagement with said detent for displacing said detent out of said engagement thereby to free the plates for said pivotal movement, such that tampering with the angular setting of said hinge by a patient wearing said orthopedic splint is discouraged ~~tamper deterrent means arranged for protecting said detent element against displacement out of said engagement by an unaided hand.~~

32 (currently amended). The hinge of Claim 31 wherein said covering structure
comprises an apertured plate generally encompassing said detent such that the
detent is substantially recessed below an outer surface of said plate within said
5 aperture, said aperture being sized to prevent operation of said detent by an
unaided hand ~~tamper deterrent means comprise a cover protecting said detent~~
~~element against displacement out of said engagement by an unaided hand, and~~
~~an aperture in said cover sized and disposed for admitting a tool end operative~~
~~for displacing said detent out of said engagement against said urging of said~~
10 ~~spring and thus to free the plates for said pivotal movement, whereby tampering~~
~~with the angular setting of said hinge by a patient wearing said orthopedic splint~~
~~is discouraged.~~

C4 33 (newly added). The hinge of Claim 18 further comprising a locking element
15 removably engageable with said detent for holding said detent out of said
engagement thereby to facilitate adjustment of the plates to a desired angular
relationship, said locking element also serving as a said tool for disengaging said
detent against said spring urging.

20 34 (newly added). The hinge of Claim 33 wherein said locking element has a
threaded end for engagement with said detent.

35 (newly added). The hinge of Claim 33 wherein said locking element is a
screw engageable in a threaded screw hole defined in said detent to serve as a
25 finger hold for operating said detent.

36 (newly added). The hinge of Claim 35 wherein said screw can be threaded
through said detent and into engagement against said upper plate thereby to
hold said detent in a disengaged condition against said urging of said spring
30 thereby to permit convenient angular adjustment of said hinge.

C4 37 (newly added). The hinge of Claim 22 wherein said locking element is a screw engageable in a threaded screw hole defined in said detent, wherein said screw can be threaded through said detent and into engagement against said upper plate thereby to hold said detent in a disengaged condition against said urging of said spring thereby to permit convenient angular adjustment of said hinge, and wherein said screw is removable from the splint thereby to discourage tampering with the detent or may be left in said screw hole in an untightened condition to serve as a finger hold for operating said detent.

10 38 (newly added). A hinge for an orthopedic splint comprising:
an upper plate and a lower plate connected for pivotal movement, a pair of wheels turning concentrically with said pivotal movement of the plates, each of said wheels having a stop thereon operative for limiting pivotal movement of said lower plate relative to said upper plate in one direction of movement, such that
15 the range of pivotal movement between the plates may be set by the angular spacing between the stops on said wheels, a tab extending radially from each of said wheels and a directional marking on each said tab as a visual indicator for assisting a therapist in setting the relative angular positions of the wheels during
20 adjustment of the hinge.

39 (newly added). The hinge of Claim 38 wherein said directional marking is a directional arrow on each of said tabs.